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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,379	04/11/2007	Adam Samuel Best	TS6454US	1281
23632	7590	09/08/2011		
SHELL OIL COMPANY				
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EXAMINER				
WEINER, LAURA S				
ART UNIT		PAPER NUMBER		
1726				
MAIL DATE		DELIVERY MODE		
09/08/2011		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/584,379

**Applicant(s)**

BEST ET AL.

**Examiner**

/Laura Weiner/

**Art Unit**

1726

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 August 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12, 15-17, 19, 20 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) 24-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 15-17, 19, 20, 22 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment filed 8-10-2011 has been considered but is moot in view of the new ground(s) of rejection. Therefore, the finality of the last office action is withdrawn. The rejection of claims 1-6, 8-11, 13, 18 under 35 U.S.C. 102(a) as being anticipated by Hollenkamp et al. (WO 2004/082059) has been withdrawn.

### ***Election/Restrictions***

2. Applicant's election without traverse of Group I, claims 1-23 and the elected species, a rechargeable battery comprising a cathode comprising  $\text{LiCrTiO}_4$ , an anode comprising lithium metal and an electrolyte comprising an anion and a cation comprising a pyrrolidinium ring structure having the formula N-methyl-N-butyl-pyrrolidinium and further comprising an alkali salt in the reply filed on 10-15-2010 is acknowledged. A cathode comprising  $\text{LiCrTiO}_4$  was found allowable so  $\text{LiMn}_2\text{O}_4$  was searched.

3. Claims 24-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10-15-2010. Therefore claims 1-12, 15-17, 19-20, 22-23 were examined.

***Claim Rejections - 35 USC § 112***

4. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a temperature of 50-200 degrees C, does not reasonably provide enablement for a temperature above 50 degrees C. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. Claim 3 needs to include an upper limit.

5. Claims 1-12, 15-17, 19-20, 22-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is rejected because the claim should cite, "wherein the electrolyte comprises" and should cite "and comprising ...Li<sub>4</sub>Mn<sub>5</sub>O<sub>12</sub> or Li<sub>4</sub>-yMgyMn<sub>5</sub>O<sub>12</sub>...".

Claims 2-4 are rejected because there is no antecedent basis for "wherein the electrochemical element is".

Claim 8 is rejected because it is unclear what R1-R10 is defined by because of the language of the claim, "wherein R1-R10 are either: H; F; separate alkyl groups, ...

and comprise heteroatoms.”.

Claim 9 is rejected because the claim should cite “B(C<sub>2</sub>O<sub>4</sub>)<sub>2</sub>- or C(CF<sub>3</sub>SO<sub>2</sub>)<sub>3</sub>.”

Claim 12 is rejected because the claim should cite “wherein the alkali salt”.

Claims 15-17 are rejected because the claim should cite “wherein the electrolyte comprises” and “wherein the cation has”.

Claim 17 is rejected because the claim should cite “M=Mg, Nb, Zr, Ti or Al”.

Claim 19 is rejected because the claim should cite “LiTi<sub>2</sub>O<sub>4</sub> or Li<sub>4-y</sub>MgyTi<sub>5</sub>O<sub>12</sub>”.

### ***Conclusion***

6. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Laura Weiner/ whose telephone number is (571)272-1294. The examiner can normally be reached on M-H (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura Weiner/  
Primary Examiner  
Art Unit 1726

September 6, 2011